AMENDMENTS TO THE CLAIMS:

Please amend the claims as follows. This listing of claims will replace all prior listings.

1. (CURRENTLY AMENDED) A force generator comprising:

a rotationally fixed first circular member defined about a first axis to define a first inner diameter circular path, said first circular member having a first radius;

a second circular member defined about a second axis offset from said first axis to define a second radius;

a crank which mounts said second circular member, said crank rotatable about said first axis;

a mass located adjacent a circumference of said second circular member movable about a two-cusp hypocycloid path to generate a vibratory inertial force;

a ~~controller~~processor;

a sensor system in communication with said ~~controller~~processor; and

a ~~motor~~power source which drives said crank, said ~~motor in communication with said controller~~processor ~~to~~ controls said power source to drive said crank ~~to control~~ such that a phase and magnitude of ~~said~~ the vibratory inertial force is continuously varied to ~~compensate for~~ reduce an externally generated vibratory force sensed by said sensor system.

2. (ORIGINAL) The force generator as recited in claim 1, wherein said vibratory inertial force is a sinusoidal inertial force in a straight line.

3. (CANCELLED)

4. (PREVIOUSLY PRESENTED) The force generator as recited in claim 1, wherein said rotationally fixed first circular member comprises a ring gear.

5. (ORIGINAL) The force generator as recited in claim 1, wherein said second circular member comprises a planet gear.

6-7. (CANCELLED)

8. (WITHDRAWN) The force generator as recited in claim 1, further comprising an opposed circular counter member mounted to said crank about a third axis offset from said first axis.

9. (WITHDRAWN) The force generator as recited in claim 8, wherein said opposed circular counter member comprises a planet gear in meshed engagement with said first circular member.

10-12. (CANCELLED)

13. (WITHDRAWN) A method of force generation for active vibration control in a rotary-wing aircraft comprising the steps of:

(1) defining a circular path within a rotationally fixed first circular member about a first axis, the first axis transverse to an axis of rotation of a main rotor assembly of the rotary-wing aircraft;

(2) defining a second circular member about a second axis offset from the first axis;

(3) locating a mass adjacent a circumference of the second circular member movable about a two-cusp hypocycloid path; and

(4) controlling movement of the second circular member about the circular path such that the second circular member simultaneously completes one revolution about the second axis and one orbit around said first axis to generate a vibratory inertial force to minimize a vibratory force from the main rotor assembly.

14-18. (CANCELLED)

19. (WITHDRAWN) An active vibration control (AVC) system for a rotary-wing aircraft comprising:

a multitude of sensors located within a rotary-wing aircraft;

a controller in communication with said multitude of sensors;

a force generator comprising:

a rotationally fixed first circular member defined about a first axis to define a first inner diameter circular path, said first circular member having a first radius;

a second circular member defined about a second axis offset from said first axis to define a second radius, said second circular member movable about the circular path to simultaneously complete one revolution about said second axis and one orbit around said first axis;

a crank which mounts said second circular member, said crank rotatable about said first axis;

a mass located on said second circular member movable about a two-cusp hypocycloid path to generate a vibratory inertial force; and

a motor which drives said crank, said motor in communication with said controller to drive said crank to control a phase and magnitude of said vibratory inertial force in response to said processor.

20-26. (CANCELLED)

27. (WITHDRAWN) The force generator as recited in claim 8, wherein said opposed circular counter member comprises a counterweight.

28. (WITHDRAWN) The force generator as recited in claim19 , wherein said force generator is located within a fuselage of the rotary-wing aircraft.

29. (WITHDRAWN) A method as recited in claim 13, further comprising the step of:

(5) sensing a vibratory force from a main rotor assembly; and

(6) transmitting the vibratory inertia force of said step (4) through a fuselage to minimize the vibratory force sensed in said step (1).

30. (WITHDRAWN) A method as recited in claim 13, wherein said step (4) further comprises the step of:

(a) continuously varying the vibratory inertial force to a changing dynamic characteristic of the rotary-wing aircraft to minimize the vibratory forces sensed in said step (1).

31. (PREVIOUSLY PRESENTED) The force generator as recited in claim 1, wherein said second radius is one-half the radius of said first radius, said second circular member movable about the circular path to simultaneously complete one revolution about said second axis and one orbit around said first axis

32. (NEW) The force generator as recited in claim 1, wherein said power source is an electric motor.

33. (NEW) The force generator as recited in claim 1, wherein at least one sensor of said sensor system is mounted in a cockpit area.

34. (NEW) The force generator as recited in claim 1, wherein at least one sensor of said sensor system is mounted in a cabin area.

35. (NEW) The force generator as recited in claim 1, wherein said sensor system generates signals representative of dynamic changes at selected locations as a main rotor assembly of a rotary wing aircraft rotates.

36. (NEW) The force generator as recited in claim 35, wherein said phase and magnitude is continuously varied by said processor in response to changing dynamic characteristics in part caused by said rotor assembly.